

NON-INVASIVE IMAGING OF BIOLOGICAL TISSUE

Abstract of the Disclosure

An optical method and system for *in vivo*, non-invasive imaging of biological tissue includes a stimulator and a spectrophotometer. The stimulator is constructed and arranged to stimulate cognition in a subject. The spectrophotometer is co-operatively arranged with the stimulator. The spectrophotometer is coupled to an optical module constructed to provide a multiplicity of arrayed source-detector pairs constructed for direct engagement with the subject. The system includes a light source constructed to introduce electromagnetic radiation of a visible or infra-red wavelength into biological tissue and a light detector constructed to detect optical radiation that has migrated in the tissue. A processor receives signals of the detected radiation from the light detector and is constructed and arranged to create a defined spatial image of the tissue by effectively producing image data corresponding to differences between two data sets of the tissue being stimulated and the tissue not being stimulated by the stimulator.